DOCUMENT RESUME

ED 099 649 CE 002 749

AUTHOR	Jones, Charles B.
TITLE	An Analysis of Student Follow-up Data for Administrative Decision Making.
INSTITUTION	Bryan Independent School District, Tex.
SPONS AGENCY	Texas Education Agency, Austin. Div. of Occupational Research and Development.
PUB DATE	30 Jun 74
NOTE	42p.; For the procedure used see CE 002 750
EDRS PRICE	MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS	Data Collection; Educational Improvement; *Followup Studies; Literature Reviews; *Occupational Choice; Secondary Education; *Vocational Education; *Vocational Followup
IDENTIFIERS	Texas

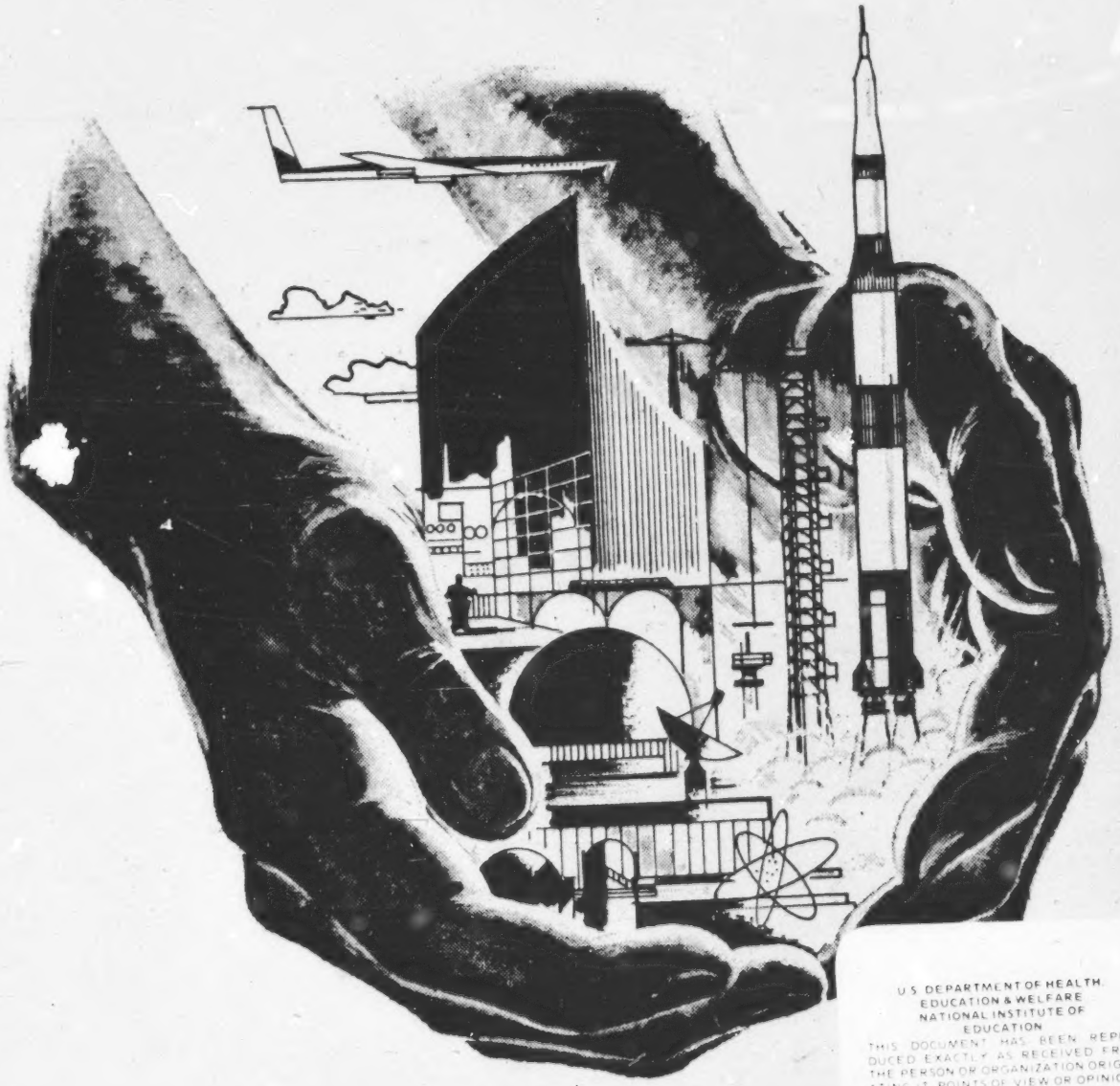
ABSTRACT

The study was conducted in Texas on a sample of 778 students to develop a process for administrative decision-making related to modifying or redirecting educational programs through collection and analysis of followup data obtained by questionnaires sent to former students. The document deals with a comparison of former students who took vocational courses and those who did not, when occupational choice occurred, and the effect of selected factors (academic/vocational courses, teachers, chance, etc.) on occupational choice. Opening sections of the document are devoted to a seven and one-half page review of literature and descriptions of the study's purpose, objectives, and its methodology. The major section of the document presents an analysis of data gathered from former vocational-technical students and non-vocational-technical students. Data related to student responses and hypotheses in the areas of job satisfaction, basic skills and technical knowledge, effectiveness of facilities and equipment, effectiveness of instructors, and personal services provided by high schools are tabulated and discussed. A summary, nine conclusions, and seven recommendations conclude the document. A suggested model for evaluating vocational-technical programs, a 38-item bibliography, and the questionnaire form are appended. (NH)

BEST COPY AVAILABLE

ED 099649

AN ANALYSIS OF STUDENT FOLLOW-UP DATA FOR ADMINISTRATIVE DECISION MAKING



U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

BRYAN INDEPENDENT SCHOOL DISTRICT

CE003749

ED 099649

AN ANALYSIS OF STUDENT FOLLOW-UP DATA FOR ADMINISTRATIVE DECISION MAKING

Submitted to

THE DIVISION OF OCCUPATIONAL RESEARCH AND DEVELOPMENT

of the

TEXAS EDUCATION AGENCY

Under Contract 42301208

by

Charles B. Jones

VOCATIONAL-TECHNICAL EDUCATION

BRYAN INDEPENDENT SCHOOL DISTRICT

June 30, 1974

ABSTRACT OF PROPOSAL

Title of Proposed Project:	AN ANALYSIS OF STUDENT FOLLOW-UP DATA FOR ADMINISTRATIVE DECISION MAKING
Applicant Organization:	Bryan Independent School District
Project Director:	Charles B. Jones Vocational Director (823-5441)
Funds Requested for Support of Project:	$24,511.00
Duration of Project:	July 1, 1973 - June 30, 1974

PROBLEM

The development of a process for evaluating the products of public schools, to meet the demand for accountability is needed. The basic needs of the individuals for occupational preparation and the nature of that preparation needs to be examined in light of job experience of the individual after he leaves school to evaluate the in school process.

OBJECTIVES

The objectives of the program deal with a comparison of former students who took voactional courses and those who did not, when occupational choice occurred, and the effect of selected factors on occupational choice with implications for decision making in the area of guidance and program redirection or modification.

PROCEDURES

A survey for graduates of vocational programs was developed, validated and utilized to statistically determine if there were differences in students who take various curricular routes through the school system. An Analysis of Variance was used and data presented in usable statistical form.

RESULTS PRODUCED
AND
PROPOSED UTILIZATION OF FINDINGS

A document describing the research was produced. This included data presentation, narrative, results, and recommendations. It is anticipated that this technique will be adopted as a standard research method for accountability purposes and administrative decision making.

TABLE OF CONTENTS

ABSTRACT 2

TABLE OF CONTENTS 3

LIST OF TABLES 4

INTRODUCTION 5

PROBLEM AND RATIONALE FOR THE STUDY 6

REVIEW OF LITERATURE 9

PURPOSE AND OBJECTIVES 17

METHODOLOGY 18

PRESENTATION AND ANALYSIS OF DATA 20

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 28

REFERENCES CITED 31

APPENDICES 34

LIST OF TABLES

TABLE 1. RESPONSES OF FORMER STUDENTS TO ITEMS RELATED TO JOB SATISFACTION 21

TABLE 2. ANALYSIS OF DATA RELATED TO HYPOTHESIS ONE 21

TABLE 3. RESPONSES OF FORMER STUDENTS TO ITEMS RELATED TO BASIC SKILLS AND TECHNICAL KNOWLEDGE 22

TABLE 4. ANALYSIS OF DATA RELATED TO HYPOTHESIS TWO 22

TABLE 5. RESPONSES OF STUDENTS TO ITEMS RELATED TO EFFECTIVENESS OF FACILITIES AND EQUIPMENT 22

TABLE 6. ANALYSIS OF DATA RELATED TO HYPOTHESIS THREE 24

TABLE 7. RESPONSES OF FORMER STUDENTS RELATED TO EFFECTIVENESS OF INSTRUCTORS 24

TABLE 8. ANALYSIS OF DATA RELATED TO HYPOTHESIS FOUR 25

TABLE 9. RESPONSES OF FORMER STUDENTS RELATED TO PERSONAL SERVICES PROVIDED 25

TABLE 10. ANALYSIS OF DATA RELATED TO PERSONAL SERVICES 25

INTRODUCTION

This study was begun in 1973 to answer questions about the effectiveness of vocation-technical programs. Decision-making about program effectiveness and redirection is not made solely on the type of information that comes from a study of this nature. Bulletin 679 is implemented so that costs of various programs can be analyzed. Teacher evaluation forms are utilized. Program standards and accreditation standards also are influencing factors on a decision-making process.

Certain questions were of particular interest. How effective had high school been in preparing students for job satisfaction? How effective was high school in preparing students to be effective in their jobs? How did the facilities and equipment measure up in preparing students? How effective did students think instructors were in preparing them for job experiences? How effective were the personal services provided by the high school in light of job experiences? When do students make occupational decisions and what influences these decisions? What do we do with this information when we obtain it?

BEST COPY AVAILABLE

PROBLEM AND RATIONALE FOR THE STUDY

The basic purpose of education is learning, which is emphasized over teaching. When one considers education in this sense, he will think of basic skills, knowledge and attitudes. The state of the art of measurement is such that one can measure quite effectively in these areas. There are many things that educational programs will be doing which will not be written down in terms of measurable objectives. Teachers are certainly free to go beyond stated objectives. However, what is being measured and the concepts that are being accounted for are usually and of necessity written down and are available for consideration.

In the educational systems of Texas, one thing that has developed as an essential part of every local educational system is the fiscal audit in becoming accountable for funds. This same rationale for accountability of fiscal expenditures is now being expanded into another area of education, the instructional program. It would seem that by taking this same concept of accountability and moving it into the area of student accomplishment, better relations could be established between educational personnel: the school boards, the administrators, the teacher, the parents, the community and the students themselves.

In determining what school should be held accountable for it is important that administrators consider factors related to what students encounter after terminating their educational experience with the high school. Whatever the level of schooling at which the transition from school to employed activity occurs, the individual's readiness and opportunity to find satisfactory employment is important to the maintaining of self-respect and dignity as an individual. The ability of society to afford economic security to people with varing levels of

educational attainment and occupational experience lies near the heart of sustaining a safe and sane society. It appears vital, therefore, that educational planners examine carefully the basic relationship of school programs to the needs of all individuals for occupational preparation and to the nature of the preparation which schools should and can provide.

Technological change has suddenly challenged man by creating a new relationship between man and his work. It apparently has placed education squarely between man and his work (37). Implications are that education must change its purpose to prepare persons for work in a world of accelerating change. It is not now a matter of only new social and economic values replacing older ones but of new ones themselves being replaced at an ever accelerating rate with only those persons who are able to adapt to change being the ones to survive in the new world of work.

It is important, therefore, that educational planners and school administrators find the answer to questions that must be answered and these must be updated on a continuing basis. Some questions that must be answers are: (a) How effectively is the high school preparing students to meet the challenges of change and the adjustments necessary to the realities of work? (b) Is there a significant difference between the post secondary experience of students who take vocational-technical courses and those who do not? (c) What factors influence the graduates to choose the occupational areas that they pursue and when are these decisions made? (d) Is there a significant difference between vocational-technical graduates and graduates of non-vocational-technical graduates in occupational satisfaction? (e) What should be recommended for program adjustments as implied in an Analysis of Data?

To answer these questions or not answer them, without a doubt will affect the quality of the decision making process of the School Administrator. As the school becomes more open, and as the effort between school and community becomes more closely tied together through cooperative efforts, the more necessary the answer to these questions become. Not only could administrative decisions be influenced about modifying courses, selection of personnel, updating of facitlities and equipment, but decisions about modifying guidance procedures could emerge. If there is a time in secondary school when students most likely make decisions, and if certain influences cause these decisions, then administrators must be aware of these facts.

REVIEW OF LITERATURE

In reviewing the literature germane to the purpose and objectives of the investigation, four general areas should be considered. They are: (1) student follow-up studies, (2) evaluation and accountability, (3) in school activities related to occupational choice and guidance activities, and (4) the effects of the first three on administrative decision making.

Efforts to determine the effect of various educational programs on students have yeilded varied results. Research suggest several problems exist in dealing with follow-up studies (23:37).

1. For research purposes, follow-up studies should be viewed as a component part of a larger system of studies--the evaluation of educational programs.

2. The procedures of cost-benefit analysis, exemplify the types of conceptualization required, but current studies illustrate that research strategies do not have general applicability.

3. Most research starts with persons in school and moves forward. These studies ought to be complimented by acquiring better information about those being employed, including the nature of their pre-employment training if any.

4. Current studies fail to design techniques in which sophisticated statistical analysis would be either appropriate or helpful.

5. The basic weakness of most studies is the weak design and inadequate statistical treatment.

The National Advisory Council on Vocational Education (1:38) states:

> "Effective occupational preparation is impossible if the school feels its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing the student on a job and following-up his successes and failures provide the best possible information to the school on its strengths and weaknesses."

The United States Department of Health, Education, and Welfare has strongly supported follow-up studies of graduates when it stated (35)

that no vocational program can be wholly successful unless there is a regular and systematic follow-up of graduates.

Little (23) comments on problem that continue to plaque follow-up studies. They have some inherent hazards, such as reliance upon questionnaires and interviews and the attendant problems of accounting for non-respondents. Research workers agree that important decisions are being made about occupational education and training programs without adequate information about their current or potential effectiveness. The pressing need as he sees it is for programmatic research of such scope and depth that definitive answers can be found. The demonstration of such a research program within a state, a geographical region, a sample of states or within a sample of schools from each of the states is needed. A replication of some of the comparative and benefit-cost types of studies would be worthwhile.

Generally, the studies that have been made are of three types: (1) administrative reports that include information gathered to describe the occupational status of graduates of specified educational programs. These studies have no general applicability; (2) comparative studies designed to compare graduates of differing types of programs. These studies have more generally useful information; and (3) benefit-cost studies that generally try to establish economic effectiveness of programs.

Evans (12) says the largest unanswered question in the field is, "What happens to a student as a result of high school vocational education?" He does however, continue that sample studies have given us some information: (1) 20 percent of vocational education graduates go on to post secondary school education; (2) less than 5 percent are unemployed (Compared to

12 percent or more in their age group); (3) of those in the labor force between 60 percent and 80 percent are placed on jobs in the field for which trained or in related fields; (4) vocational graduates get jobs faster, are better satisfied with their jobs, and keep jobs longer than graduates of other high school programs; (5) high school vocational education costs $150 per trainee per year in federal funds and less than $1200 per trainee per year in total. These costs are markedly less than other occupational programs.

There is an interesting conflict Evans (12) says in our desire to prepare our students for a wide range of employment and our principle evaluative measure which is preparation of students employed with the occupation for which trained. A school would get highest short term placement records with a program which:

(1) Prepares a student for employment in a particular establishment.

(2) Concentrates on a particular set of skills needed for employment at that moment in time.

(3) Carefully shields the student from a view of occupations other than the one for which he is being prepared.

(4) Emphasizes only the desirable aspects of employment in that occupation.

(5) Carefully rejects all students who would not be enthusiastically received by employers and labor organizations.

(6) Encourages students not to enter higher education.

(7) Encourages the student to continue in the field originally chosen, even if he later finds he is not capable or interested in it.

Such a program would be narrow and would be rejected immediately by any high school teacher. Yet this program would have to be followed in order to insure high initial placement rates.

Dyer (10) looks at priorities in state-wide evaluation of programs. He attempts to define what the evaluation should provide. He says:

> "(1) The evaluation should provide basic information for helping every student in the state assess his own progress through the educational system of the state, so that he can become increasingly mature in understanding himself, his educational need and his future possibilities.
>
> (2) It should provide the teachers and administrators with basic information for assessing the effectiveness of all the principle phases of their educational programs in sufficient detail to indicate steps for modifying and strengthening those programs.
>
> (3) It should provide the state education authority with basic information needed for allocating state funds and services in a way to equalize opportunity for all children in the state.
>
> (4) It should provide research agencies at state and local level with data for generating and testing hypotheses concerning the improvement of all parts of the educational process.
>
> (5) It should provide every school system with strong incentives to experiment under controlled conditions with new and promising programs.
>
> (6) It should periodically provide the state legislature and the general public readily interpretable information concerning the progress of the educational system."

Steel and Torrie (32) and others (4), (6), (7) provide for a most suitable means of analyzing the data in a statistically significant manner. The use of the analysis of variance and covariance seem to be the ideal means of comparing the groups. Anastasi (2) warns of possible pitfalls when using the Likert type scale or other rating scales. Ratings are subject to a number of constant errors; the halo effect, error of central tendency, and leniency error.

Several authors discuss activities related to guidance activities and occupational choice. Related to the research Feldman (14) recommends that students be allowed to move in and out of vocation; technical and

BEST COPY AVAILABLE

academic courses in an effort to discover each child's talent and demonstrate their relationship to the work world. Eggeman (11) calls for providing more vocational guidance and more cooperative and pre-vocational courses in schools. Brookover (5) says the level of schooling achieved, the grades assigned to students by teachers, the kind of curricula to which the students are exposed, and numerous other devices within the educational system determine whether a child is to become a doctor or an auto mechanic. The type of education and evaluation of students largely determine the general level of position in which a young person will find himself. Education is allocating youth and must continue to do so unless a new institution develops to do this.

Wolfbein (38) says one of the major facts about unemployment in the United States is its differentially high concentration among young people. Youth employment is triple the national overall figure. As technology advances, it takes more and more learning and training to get a job, to keep it and move about in career development in a significant proportion of career fields (38:94). Thompson (34) reporting on basis of careers sets forth competence, aspiration, and the structure of opportunities as important variables in shaping the career of an individual. Despite such variations, the individual's attitude at any given time toward his present occupation and his specific job is influenced by his estimate of its potential for him and his estimate of future needs.

Super (33) reporting on the Career Pattern Study found that vocational maturity in high school predicts career success better than do the conventional predictions based on test scores or grades, and better than

occupational success. Mayhew (25) found that past academic performance has proved to be the most important single evidence on which to base a prediction of future academic success, and past academic performance is a factor that Brookover (5) gave as one means of allocating persons to become either a doctor or an auto mechanic. Super (33) observes that in his ten year study boys who are given opportunities in school and out of school and use these opportunities during their school years tend also to make good use of their later career opportunities.

Peters (26) reports that the process of helping a person match his personal attributes and his background with suitable jobs and employment opportunities is difficult, while Hoppock (22) states that very few tests have been validated that can measure even half of what ever determines success in the occupation. Hollingshead (21) found that the pattern of vocational choice corresponds roughly with the job patterns associated with each class in the adult world. Belin (3) states that the most important type of determinant of choice of both the college and non college groups was reality factors. One fact that stood out was that experience permeates the entire determinant structure. Through experience, he states, the individual comes to know reality. Farber's (13) data suggests different effects of social class on intellectual development at the upper and lower I.Q. ranges, while Caplow (8) found that realistic choices typically involve the abandonment of old aspirations in favor of more limited objectives. These seem to relate to each other.

In an extensive survey of published data on the validity of different types of tests against occupational criteria, Ghiselli (15) found that

BEST COPY AVAILABLE

most tests predict performance in training better than most tests predict job performance. Rosove (29) and Resnick (28) point toward the use of technology in helping develop and predict occupational competency. Jules (20) points out that the discovery of a new device or machine or even of a new management of sales device means millions on the market and this in turn has led to increased pressure on schools to introduce new gadgetry.

As we look at the various finding related to the previously mentioned areas the question arises as to how the decision maker shall use the informantion he receives. It would seem logical to develop a process to inject data of each particular educational institution into the decision making process. Griffiths (17) outlines the steps in the decision making process:

1. Recognize, define, and limit the problem
2. Analyze and evaluate the problem
3. Establish criteria or standard by which solutions will be evaluated or judged as acceptable and adequate to the need.
4. Collect data
5. Formulate and select the preferred solution or solutions.
6. Put into effect the preferred solution.

He further states that the decision making process is an organizational matter and not personal in nature. The efficiency of the organization will be related to the efficiency of the decision making process. He finds that the data should be relevant, that is, either free from bias or with the bias clearly indicated. Simon (31) states that a general theory of Administration must include principles of organization that will insure correct decision making just as it must include principles that will insure effective action. Griffiths (18) states that the better decisions are

made on the basis of all facts relevant to a problem. But, because of their perception teachers are not willing to supply the facts they have, especially if the problem is in a sensitive area of school policy.

Livingston's (24:659) comments on decision making covers the subject well when he states, "If we expand the concept of decision making to include, on the one hand the process by which the decision is arrived at, and on the other hand, to include the process by which we implement or make the decisions "work" and if we further recognize that this is a continuing dynamic process rather than occupational events, then decisioning means something quite different than heretofore and becomes the basis of all managerial action."

PURPOSE AND OBJECTIVES

The purpose of this investigation is to develop a process for administrative decision making related to modifying or redirecting educational programs through collection and analysis of Follow-Up data from former students.

1. To determine if there is a significant statistical difference in selected areas between those who graduate from tracts that include vocational-technical education courses and those who graduate from tracts that do not include Vocational-Technical courses.

2. To determine from selected factors those that most influenced occupational choice of graduates.

3. To determine when graduates make occupational decisions.

4. To determine why a sample of non-respondents to follow-up surveys do not respond.

5. To develop a list of recommendations on how to utilize the data in the decision making process of modifying and re-directing of on going programs within the school.

METHODOLOGY

The sample for the research was approximately 778 students that had completed high school in the past five years (May 1968 through May 1973). Two hundred sixty-three former students were randomly selected who did not take vocational-technical courses and five hundred fifteen were selected that had taken vocational-technical courses. Useful home economics was not included in the sample. Data was obtained from (1) a questionnaire developed, validated, coded and mailed to each student from the school placement and follow-up office; and (2) individual student files at the high school office. For purposes of the study the students were divided into two groups and referred to as V-T (Vocational-Technical) and N-V-T (Non-Vocational-Technical).

A questionnaire was developed so that values could be assigned to each response. Values ranged from one to five with a positive response carrying the greater value. (See Appendix for questionnaire.)

To accomplish objective one, data collected by the questionnaire was grouped to test the following null hypotheses by appropriate analysis of variance.

1. There is no statistically significant difference in how the two groups perceive the effectiveness of high school in preparing them for job satisfaction.

2. There is no statistically significant difference in how the two groups perceive the effectiveness of basic skills and job related general technical knowledge received in high school, in preparing them for their job experiences.

3. There is no statistically significant difference in how the two groups perceive the effectiveness of the facilities and equipment in high school in preparing them for their job experiences.

4. There is no statistically significant difference in how the two groups perceive of the instructors in high schools, in preparing them for job experiences.

5. There is no statistically significant difference in how the two groups perceive the quality of personal services provided by the high school in light of job experience.

To accomplish objective two and three, data collected by the questionnaire was tabulated, analyzed by appropriate statistical methods and presented in tables showing the distribution of response.

To accomplish objective four a task force was appointed to contact personally for an interview those former students who did not respond to the questionnaire. A representative sample was contacted and the answers recorded with like responses combined and reported in a meaningful way to determine why former students did not want to respond.

Based on the analyzed data, conclusions were drawn and recommendations were made for modification as to how specific data may be used or fed into the decision making process related to existing programs including personnel, facilities and equipment, guidance or instructional procedures. Recommendations also were made as to the usefulness of Vocational-Technical education for job preparation and job satisfaction. This was to accomplish objective five.

The questionnaire was given to 100 cooperative education students in the eleventh and twelfth grades to validate the instrument in its clarity and understandability. It is assumed that if high school juniors and seniors can understand the terminology and meaning of questions, then high school graduates can also.

PRESENTATION AND ANALYSIS OF DATA

The section presents selected data on former vocational-technical students and non-vocational-technical students. Data collected was used to test certain null hypotheses. These hypotheses are stated and the data analyzed. Presentation of the data is in table form. All F-ratios were .05 level and the hypothesis rejected or accepted under these conditions. In regard to the null hypothesis that there is no significant difference in how the two groups perceived the effectiveness of high school in preparing them for job satisfaction we can reject the null hypothesis and state that there is a difference at the .05 level. When analyzing the data related to these perceptions we find the mean of vocational students to be higher on all questions. This is shown in Table 1. Table 2 combines questions six and seven for analysis of variance related to job satisfaction. A significant F value resulted.

The second null hypothesis stating that no difference exists in how the two groups perceived the effectiveness of basic skills and job related general technical knowledge received in high school cannot be rejected. Table 3 projects the means and values for question eight and nine. Table 4 depicts the F score of all questions related to basic skills and general technical knowledge.

TABLE 1. RESPONSES OF FORMER STUDENTS TO ITEMS RELATED TO JOB SATISFACTION

Statement	Vocational Mean	Non-Vocational Mean
How do you feel about your present job?	4.43	4.19
Considering the characteristics of your present job, rate the degree to which you are satisfied with each of the following:		
A. Salary	3.70	3.59
B. Fringe benefits	3.88	3.71
C. Advancement possibilities	3.69	3.22
D. Supervision and management	4.04	3.93
E. Co-workers	4.49	3.97
F. Company policies and practices	3.82	3.51
G. Facilities and equipment	4.21	3.97
H. Working conditions	4.26	4.06
I. Variety of work tasks	4.29	3.76
J. Job security	4.30	3.73
K. Safety conditions	4.37	3.86

TABLE 2. ANALYSIS OF DATA RELATED TO HYPOTHESIS ONE. (JOB SATISFACTION)

Hypothesis 1, Questions 6-7K

Analysis of Variance Table

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Tracts	1	.66127	.66127	42.90308*
Questions	11	1.50148	.13650	8.85599
Error	11	.16954	.01541	
Total	23	2.33230		

* $P < .05$

BEST COPY AVAILABLE

TABLE 3. RESPONSES OF FORMER STUDENTS TO ITEMS RELATED TO BASIC SKILLS AND TECHNICAL KNOWLEDGE

Statement	Vocational Mean	Non-Vocational Mean
With your experience on the job in mind, how do you feel about the training you received in basic skills at the high school?	3.67	3.19
Considering your experience on the job, how do you feel about the technical knowledge and training you received at high school as it relates to your job?	3.57	2.84

TABLE 4. ANALYSIS OF DATA RELATED TO HYPOTHESIS TWO
(Effectiveness of Basic Skills and Job Related Technical Knowledge)

Hypothesis 2, Questions 8 & 9
Analysis of Variance Table

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Tracts	1	.36041	.36041	23.09125
Questions	1	.05091	.05091	3.26184
Error	1	.01561	.01561	
Total	3	.42693		

* $P < .05$

TABLE 5. RESPONSES OF STUDENTS TO ITEMS RELATED TO EFFECTIVENESS OF FACILITIES AND EQUIPMENT

Statement	Vocational Mean	Non-Vocational Mean
In light of your experience on the job, how do you rate the equipment used in your area of instruction during high school?	4.71	4.23
In comparison to the facilities and equipment used on your present job, how do you rate the facilities and equipment used during high school in preparing you for employment?	2.85	2.57

BEST COPY AVAILABLE

The third null hypothesis that states that no difference exists in how the two groups perceive the effectiveness of the facilities and equipment in high school, in preparing them for thier job experiences cannot be rejected. The means of the questions utilized are in Table 5. The analysis of variance of the two groups are presented in Table 6.

The fourth null hypothesis stated that there was no significant difference in how the two groups perceived of the instructors in preparing them for job experiences. This hypothesis can be rejected as a significant F score was calculated. Table 7 gives the means of the two groups while Table 8 reports the analysis of variance results. The mean of the vocational student is higher on each question asked.

Hypothesis five stating that there is no difference in how the two groups perceive the personal services provided by the high school can be rejected. The mean of the vocational student response is high in all cases. Table 9 reports the mean and Table 10 gives the analysis of variance and a significant F score.

TABLE 6. ANALYSIS OF DATA RELATED TO HYPOTHESIS THREE (EFFECTIVE OF FACILITIES AND EQUIPMENT)

Hypothesis 3, Questions 10 & 11
Analysis of Variance Table

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Tracts	1	.14277	.14277	15.47036
Questions	1	3.11087	3.11087	337.09274
Error	1	.00923	.00923	
Total	3	3.26287		

* $P < .05$

TABLE 7. RESPONSES OF FORMER STUDENTS RELATED TO EFFECTIVENESS OF INSTRUCTORS

Statement	Vocational Mean	Non-Vocational Mean
How would you rate the teaching quality of your instructors during your high school training? (Consider both high school instructors and training station instructor, if applicable.)	3.87	3.34
How would you rate the knowledge your instructors possessed about their field?	4.25	3.94
How would you rate your instructors in the interest shown in your progress?	4.05	3.80
How would you rate the extent to which your instructors were up-to-date in their field?	4.17	3.69

BEST COPY AVAILABLE

TABLE 8. ANALYSIS OF DATA RELATED TO HYPOTHESIS 4 (Effectiveness of Instructors)

Hypothesis 4, Questions 12 - 15
Analysis of Variance Table

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Tracts	1	.30470	.30470	34.53321*
Questions	3	.25461	.08487	9.61870
Error	3	.02647	.00882	
Total	7	.58577		

* $P < .05$

TABLE 9. RESPONSES OF FORMER STUDENTS RELATED TO PERSONAL SERVICES PROVIDED

Statement	Vocational Mean	Non-Vocational Mean
How would you rate the quality of the following services as provided by the high school?		
Job Placement	3.35	2.63
Counseling with personal problems	3.20	3.05
Help in making career decisions	3.25	3.01
Help in securing part-time employment (if requested)	3.54	2.86
Youth organizations (All types)	3.74	3.62
Study, library and other learning resource facilities	3.90	3.82

TABLE 10. ANALYSIS OF DATA RELATED TO PERSONAL SERVICES

Hypothesis 5, Questions 16A - 16F
Analysis of Variance Table

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Tracts	1	.33411	.33411	7.94177*
Questions	5	1.23340	.24668	5.86363
Error	5	.21035	.04207	
Total	11	1.77786		

* $P < .05$

BEST COPY AVAILABLE

In accomplishing objective two the survey instrument asked responders to reveal the one factor that caused them to choose the educational or occupational route that they took after leaving high school. The following are the results of the survey. Both students who took vocational courses and those who did not are presented for comparison. The responses were:

Factor	% Vocational	% Non-Vocational
Academic course taken in high school	2.63	3.03
Vocational course taken in high school	13.15	-0-
Someone in my family	2.63	9.09
A counselor	3.29	-0-
A Vocational teacher	7.90	1.01
An Academic teacher	.65	4.04
Money	8.55	5.05
Post-high school training	1.32	2.02
Work experience	9.21	2.02
Chance	4.60	4.04
Parents	7.24	11.11
A friend	5.26	7.07
My interests	25.67	45.46
An employer	2.63	2.02
Other	5.27	4.04

Objective three related to when graduates make occupational decisions. The sample of vocational and non-vocational students responded in the following manner:

Period of Time	% Vocational	% Non-Vocational
During Elementary School	4.69	6.17
During Junior High School	13.28	18.52
During High School	39.84	41.98
While attending Junior or Senior College	7.81	6.17
While working on a job after leaving formal education	14.06	7.41
No decision yet	9.38	4.94
Others	10.94	14.81

If we combine all students we find that the following factors were chosen as the primary influences in the occupational route taken:

	Percentage
Academic Course taken in high school	2.79
Vocational course taken in high school	7.97
Someone in my family	5.18
A counselor	1.99
A Vocational teacher	5.18
A Academic teacher	1.99
Money	7.16
Post-high school training	1.60
Work experience	6.37
Chance	4.38
Parents	8.76
A friend	6.00
My interests	33.47
An employer	2.40
Other (Specify)	4.76

If we combine all student responses, both vocational and non-vocational, related to the time decisions were made about occupations, the following percentage occurs:

	Percentage
During the Elementary School	5.26
During Junior High School	15.31
During High School	40.67
While attending Junior or Senior College	7.18
While working on a job after leaving formal education	11.48
No decision yet	7.66
Others (please write)	12.44

To accomplish objective four two hundred and twenty-eight non-respondents were selected. After repeated attempts had been made to gain responses through questionnaires and reminders, a task force was formed to determine why there were no response from this group. One hundred and fourteen former students or members of the immediate family were contacted personally by phone or in person. The results are tabulated as follows:

	Number	Percentage
"Tired of getting stuff like this"	8	7%
"Don't like to fill out questionnaires"	2	1.75%

	Number	Percentage
"Thought that one questionnaire from the school was enough"	2	1.75%
"Don't care"	2	1.75%
"Didn't have time"	7	6%
"Forgot"	15	13%
"Was off at school and didn't answer"	8	7%
"Lost it at college"	2	1.75%
"Didn't think it was necessary	5	4%
"Got married and didn't have time"	10	9%
"Moved and lost it"	7	6%
"Moved and was not forwarded"	7	6%
"Didn't receive it"	10	9%
"Thought they had returned it"	5	4%
"Mother didn't know what to do with it"	10	9%
"Parents didn't read or speak English"	2	1.75%
"Didn't understand the questionnaire"	2	1.75%
"In the service and didn't respond"	7	6%
"In jail"	1	1%
"Don't really know why I didn't respond"	2	1.75%

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The study accomplished the specific objectives that related to the purpose. Statistical data revealed that there were in fact significant differences in former vocational and non-vocational student that appears to be directly tied into the tract that the student pursued while in school. From the study we can conclude that:

1. Former students who had taken vocational courses were better statisfied with their jobs and felt the school did a good job in preparing them for this.

2. There was no difference in how vocational and non-vocational students perceived of the effectiveness of the school in preparing them for their job when related to general technical knowledge and basic skills.

3. There was no difference in perceptions of the two groups about the effectiveness of facilities and equipment in preparing them for job experiences.

4. Vocational students felt that the instructors had been more effective in preparing them for job experiences.

5. Vocational students felt that the quality of personal services was more effective when compared to non-vocational students.

6. Interests are the main factor in choosing one's occupation.

7. The greater percentage of students decide to pursue their occupation during their high school years.

8. The main reason for not responding to questionnaires is because people forgot or they are tired of getting questionnaires to respond to.

9. The most significant finding is that in no case did vocational students rate in-school factors lower than the non-vocational student, when considering them in relation to job experiences.

RECOMMENDATIONS

1. That school districts consider taking a close look at their products after leaving the system to assist in administrative decision making.

2. That in-service training be provided to dissiminate the results to the faculty and staff.

3. That more attention be directed at the vocational counseling of high school students.

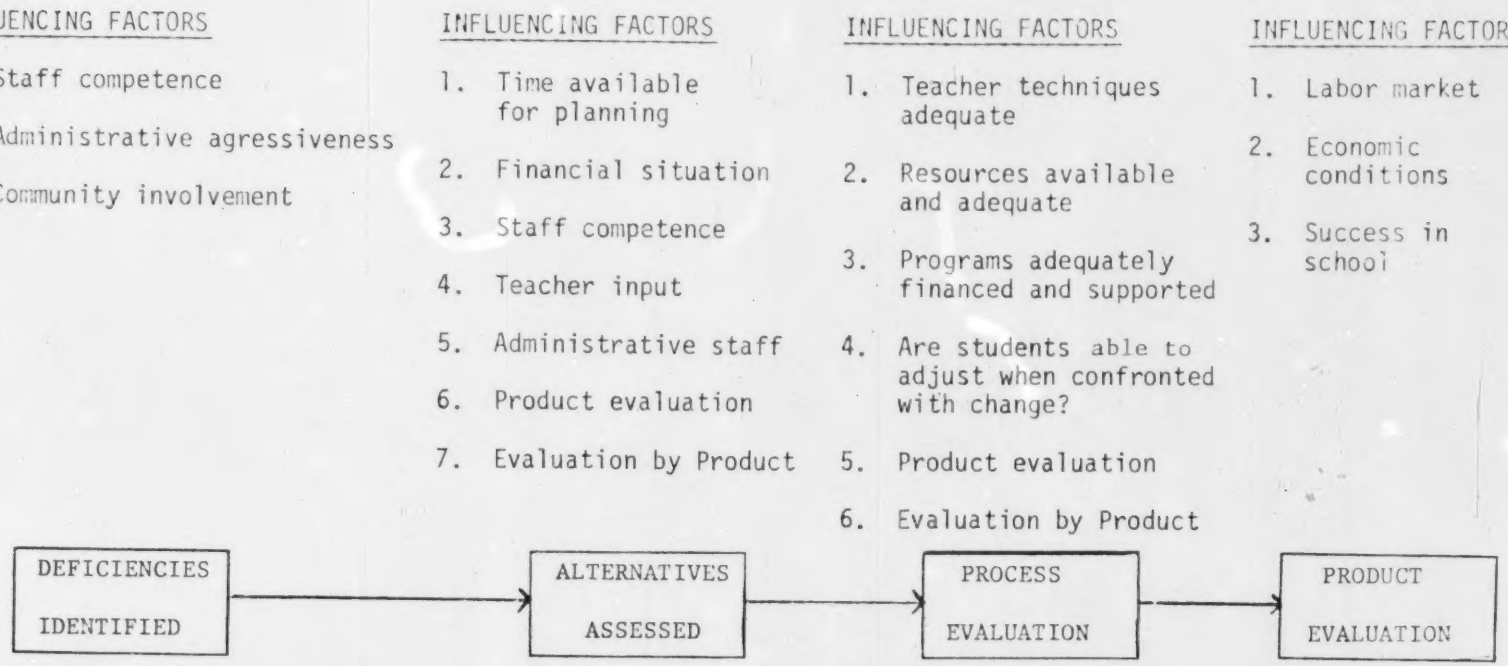
4. Since most students made career decisions in high school more information about careers needs to be provided in the intermediate grades.

5. Counselors consider working closely with faculty in dissiminating information about careers and occupational.

6. Decision making skills should be taught in grades prior to the eleventh and twelfth grade.

7. That schools develop and utilize a model similar to the evaluation model suggest in this report to assist in evaluating programs. This process or model is similar to the CIPP model and much of the terminology is the same.

A SUGGESTED MODEL FOR EVALUATING VOCATIONAL-TECHNICAL PROGRAMS


INFLUENCING FACTORS
1. Staff competence
2. Administrative agressiveness
3. Community involvement
INFLUENCING FACTORS
1. Time available for planning
2. Financial situation
3. Staff competence
4. Teacher input
5. Administrative staff
6. Product evaluation
7. Evaluation by Product
INFLUENCING FACTORS
1. Teacher techniques adequate
2. Resources available and adequate
3. Programs adequately financed and supported
4. Are students able to adjust when confronted with change?
5. Product evaluation
6. Evaluation by Product
INFLUENCING FACTORS
1. Labor market
2. Economic conditions
3. Success in school
DEFICIENCIES IDENTIFIED
ALTERNATIVES ASSESSED
PROCESS EVALUATION
PRODUCT EVALUATION
1. Are we identifying future needs?
2. Are we keeping up on census, demographic data, and projections for our community?
3. Are we current on the mood of the community?
4. What is the political situation?
1. Are we developing programs to meet changing needs?
2. Are we changing and redirecting programs to meet changing needs?
3. Are we planning for the short and long terms?
1. Are we accomplishing our stated objectives?
1. What happened to students?
2. How are they doing in areas we prepared them for?

BEST COPY AVAILABLE

BIBLIOGRAPHY

1. Advisory Council on Vocational Education 1968, Vocational Education: The Bridge Between Man and His Work, Madison, Wisconsin, Reproduction by Center for Studies in Vocational-Technical Education, University of Wisconsin, 1967, 104p.

2. Anastasi, Anne, Psychological Testing, The MacMillan Company, New York, New York, 1968, pp. 420-421.

3. Belin, H., "Factors Affecting Occupational Choice in a Lower Socio-economic Group", doctoral thesis, Teachers College Columbia University, New York, New York, 1952.

4. Birnbaum, Martin J., "Information Collection Procedures", A Strategy for Evaluative Design, Monmouth, Oregon, Oregon State System of Higher Education, 1970.

5. Brookover, Wilber B., and Gottlieb, David, A Sociology of Education, American Book Company, New York, 1964, p. 83.

6. Bruhns, Arthur E., "Evaluation Processes Used to Assess the Effectiveness of Vocational-Technical Programs", December 14, 1968.

7. Byram, Harold M., and Robertson, Marvin, Locally Directed Evaluation of Local Vocational Education Programs, Interstate Printers and Publishers Inc., Danville, Illinois, March 1970.

8. Caplow, T., The Sociology of Work, The University of Minnesota Press, Minneapolis, Minnesota, 1954.

9. Center for Human Resources, College of Business Administration, University of Houston, Mexican-American Youth and Vocational Education in Texas, February 1973.

10. Dyer, Henry S., Statewide Evaluation--What Are the Priorities? Phi Delta Kappan, Volume LI, No. 10, June 1970.

11. Eggeman, Donald F., Robert E. Campbell, and Albeno P. Garbin, Problems In The Transition From School To Work As Perceived By Youth Opportunity Center Counselors, A National Survey, The Center for Vocational-Technical Education, The Ohio State University, Columbus, Ohio, December, 1969.

12. Evans, Rupert, "The Secondary School and Occupational Preparation", NASSP Bulletin, February, 1969.

BEST COPY AVAILABLE

13. Farber, Bernard, "Social Class and Intelligence," Social Forces, December, 1965, p. 215-225.

14. Feldman, Marvin J., "Zeroing In on a Program of Zero Rejects," The Education Digest, September, 1970.

15. Ghiselli, E.E., The Validity of Occupational Tests, New York, New York, John Wiley and Sons, 1966.

16. Golembiewski, Robert T., Behavior and Organization: O and M and the Small Group, Rand McNally and Company, Chicago, Illinois, 1962.

17. Griffiths, Daniel E., Administrative Theory, Appleton Century-Crofts, Inc., New York, New York, 1959.

18. Griffiths, Daniel E., Human Relations In School Administration, Appleton-Century-Crofts, Inc., New York, New York, 1965, p. 74-77.

19. Haire, Mason (editor), Modern Organization Theory, John Wiley and Sons Inc., New York, 1959.

20. Henry, Jules, "Public Education and Public Anxiety," The Record, Teachers College, Columbia University, October 1967, Volume 69, No. 1.

21. Hollingshead, A.B., Elmtown's Youth, John Wiley and Sons, Inc., New York, New York, 1949.

22. Hoppock, Robert, Occupational Information, McGraw Hill Book Company, Inc., New York, New York, 1968, pp. 154-155.

23. Little, J. Kenneth, Review and Synthesis of Research on the Placement and Follow-Up of Vocational Education Students, The Center for Vocational and Technical Education, The Ohio State University, Columbus, Ohio, February, 1970.

24. Livingston, Robert T., "The Theory of Organization and Management," Transition of the A.S.M.E., May, 1953, p. 659.

25. Mayhew, Lewis B., "Non-Test Predictors of Academic Achievement," Educational and Psychological Measurement, Spring, 1965.

26. Peters, Herman J. and James C. Henson, Vocational Guidance and Career Development, The MacMillan Company, New York, New York, 1966, pp. 242-243.

27. Pucinski, Roman C., The Courage To Change, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1971.

28. Resnick, Lauren B., Open Education: Some Tasks for Technology, Educational Technology, January 1972, p. 70-76, Volume XII, No. 1.

29. Rosove, Perry E., The Integration of Humanism and Educational Technology, Educational Technology, January, 1972, Volume XII, No. 1.

30. Schaefer, Carl J. and Jacob J. Kaufman, New Directions for Vocational Education, Heath Lexington Company, Lexington, Mass., 1971.

31. Simon, Herbert A., Administrative Behavior, MacMillan Company, New York, New York, 1950, p. 1.

32. Steel, Robert D. and James H. Torrie, Principals and Procedures of Statistics, McGraw Hill Book Company, Inc., New York, New York, 1960.

33. Super, Donald E., "The Natural History of a Study of Lives and of Vocations," Perspective on Education, Teachers College, Columbia University, New York, New York, Spring, 1969.

34. Thompson, James D., Robert W. Avery, and Richard O. Carlson, "Occupations, Personnel, and Careers," Educational Administration Quarterly, University Council for Educational Administration, The Ohio State University, Columbus, Ohio, Winter, 1968.

35. U.S. Department of Health, Education, and Welfare, Organization and Operation of A Local Program of Vocational Education, Instructional Materials Laboratory, Trade and Industry Education, The Ohio State University, Columbus, Ohio, 1968, p. 60.

36. Venn, Grant, Man, Education, and Manpower, American Association of School Administrators, Washington, D.C., 1970.

37. Venn, Grant, Man, Education and Work, American Council on Education, Washington, D.C., 1964.

38. Wolfbein, Seymore L., Occupational Information (A Career Guide View), Random House, New York, New York, 1968.

APPENDIX

BRYAN PUBLIC SCHOOLS

EDUCATIONAL SERVICES / PHONE 823-5441
2200 VILLA MARIA ROAD / BRYAN, TEXAS 77801

January 8, 1974

TO: FORMER STUDENTS OF BRYAN PUBLIC SCHOOLS

FROM: THE OFFICE OF THE SUPERINTENDENT

The Texas Education Agency has authorized the Bryan Independent School District to conduct a research project to evaluate the products of our school system. The basic needs of the individuals for occupational preparation and the nature of that preparation are to be examined. Please consider your job experiences since leaving high school when answering the questions.

In order for us to help those students in school today and those to follow, it would be most helpful if you would complete the attached questionnaire and return it in the enclosed pre-addressed, stamped envelope as soon as possible. Please give the young people of today and tomorrow the benefit of your ideas based on your experience. Your answers to these questions will enable us to complete a random sample of persons who, like yourself, left Bryan High School during the last six years. Your response will be kept confidential and used only for authorized research purposes.

Sincerely,

Charles B. Jones

Charles B. Jones
Vocational Director

Date of this response _____

Your name _____

Your social security number _____

Your birthdate _____ _____ _____
(Month) (Day) (Year)

Your address _____
(Number and Street) (City) (State) (Zip)

Telephone _____

Year you left high school _____

1. Have you served in one of the military services or any other governmental agency since you left high school?

   No _____ Yes _____

   If yes, give the name of the service or agency. _____

2. Did you receive any special training in the service or with the governmental agency?

   No _____ Yes _____

   If yes, in what field? _____
   How long? Length of time? _____

3. What is the name of the job (occupation) you hold now? _____

4. What did you do after leaving high school?

   Did you go to a 4-year college? _____
   Did you go to a 2-year college? _____
   Did you go to a 2-year Vocational-Technical school? _____
   Did you take a part-time job and attend college? _____
   Did you take a full-time job? _____
   Did you complete a 2-year Vocational-Technical school? _____
   Did you complete a 2-year college? _____
   Did you complete a 4-year college? _____
   Other (Specify) _____

5. If you went to college, what course of studies did you pursue? _____

   _____

	Like it very much	Like it somewhat	Neither like nor dislike	Dislike it somewhat	Dislike it very much
6. How do you feel about your present job?	_____	_____	_____	_____	_____
7. Considering the characteristics of your present job, rate the degree to which you are satisfied with each of the following:					
a. Salary	_____	_____	_____	_____	_____
b. Fringe benefits	_____	_____	_____	_____	_____
c. Advancement Possibilities	_____	_____	_____	_____	_____
d. Supervision and management	_____	_____	_____	_____	_____
e. Co-workers	_____	_____	_____	_____	_____
f. Company policies and practices	_____	_____	_____	_____	_____
g. Facilities and equipment with which to do the job	_____	_____	_____	_____	_____
h. Working conditions	_____	_____	_____	_____	_____
i. Variety of work tasks	_____	_____	_____	_____	_____
j. Job security	_____	_____	_____	_____	_____
k. Safety conditions	_____	_____	_____	_____	_____

8. With your experience on the job in mind, how do you feel about the training you received in basic skills at the high school? (Basic skills include both academic and/or vocational.)

Excellent _____ Very good _____

Satisfactory _____ Barely adequate _____

Inadequate _____

9. Considering your experience on the job, how do you feel about the technical knowledge and training you received at high school as it relates to your job? (Does not mean a physical skill)

Excellent _____ Very good _____

Satisfactory _____ Barely Adequate _____

Inadequate _____

10. In light of your experience on the job, how do you rate the equipment used in your area of instruction during high school?

_____ I found it very easy to adapt to the equipment on the job.

_____ I was able to adapt to the equipment, but it took sometime.

_____ I had some problems adapting to the equipment.

_____ I found it difficult to adapt to the equipment.

_____ I found it very difficult or could not adapt to the equipment.

11. In comparison to the facilities and equipment used on your present job, how do you rate the facilities and equipment used during high school in preparing you for employment?

_____ The facilities and equipment used during high school were superior to those used on the job or those I am working with now.

_____ The facilities and equipment used during high school were the same as those used on the job or in my studies.

_____ The facilities and equipment used during high school were similar to those used on the job or in my studies.

_____ The facilities and equipment used during high school were inferior to those used on the job or in my studies.

_____ The facilities and equipment used during high school did not exist to help train me for my job or studies.

12. How would you rate the teaching quality of your instructors during your high school training? (Consider both high school instructors and training station instructor, if applicable)

_____ Most of the instructors taught in a superior manner in preparing me for my job.

_____ Most of the instructors taught very well in preparing me for my job.

_____ About the same number taught as well as did not.

_____ More were inadequate than adequate.

_____ More instructors did not teach well.

13. How would you rate the knowledge your instructors possessed about their field?

_____ Most were very knowledgeable.

_____ Most were knowledgeable.

_____ About the same number were knowledgeable as were not.

_____ Less were knowledgeable than were adequate.

_____ Most of them were not knowledgeable.

14. How would you rate your instructors in the interest shown in your progress?

_____ Most were very interested in my progress.

_____ Most were somewhat interested in my progress.

_____ About the same were interested as were not in my progress.

_____ Most were not interested in my progress.

_____ None were interested in my progress.

15. How would you rate the extent to which your instructors were up-to-date in their field?

_____ All were up-to-date in their field.

_____ Most were up-to-date in their field.

_____ About as many were up-to-date as were not.

_____ More were not up-to-date than were up-to-date.

_____ Most were not up-to-date.

16. How would you rate the quality of the following services as provided by the high school?

	Excellent	Good	Adequate	Poor	No Help
Job Placement	_____	___	_____	___	_____
Counseling with personal problems	_____	___	_____	___	_____
Help in making career decisions	_____	___	_____	___	_____
Help in securing part-time employment (if requested)	_____	___	_____	___	_____

BEST COPY AVAILABLE

	Excellent	Good	Adequate	Poor	No Help
Youth organizations (All types)					
Study, library and other learning resource facilities					

17. What one factor caused you to choose the educational or occupational route that you took after leaving high school? (Please check the one which influenced you the most)

- Academic Course taken in high school
- Vocational course taken in high school
- Someone in my family
- A counselor
- A Vocational Teacher
- An Academic Teacher
- Money
- Post-high school training
- Work experience
- Chance
- Parents
- A friend
- My interests
- An employer
- Other (Specify)

18. At what approximate time in your life did you decide to pursue the occupation that you are now engaged upon? (Please check only one)

- During Elementary School
- During Junior High School
- During High School
- While attending Junior or Senior College
- While working on a job after leaving formal education
- No decision yet
- Others (Please write)